

(μ moles/min/mg*)

15	28.76	1.917	0.164
30	43.74	0.999	0.125
170	98.51	0.322	0.050
255	177.26	0.308	0.060

* total quantity of enzymes in hydrolysis media

IN THE CLAIMS

Modifications indicated with respect to the claims existing after International Preliminary Examination

1. (Amended) A method for extracting lipid fractions from marine and aquatic animal material, said method comprising the steps of:

- (n) placing marine and aquatic animal material in a ketone solvent[, preferably acetone] to achieve extraction of the soluble lipid fraction from said marine and aquatic animal material;
- (o) separating the liquid and solid contents;
- (p) recovering a first lipid-rich fraction from the liquid contents of step (b) by evaporation of the solvent present in the liquid contents;
- (q) placing said solid contents in an organic solvent selected from the group of solvents consisting of alcohol[, preferably ethanol, isopropanol or *t*-butanol] and esters of acetic acid[, preferably ethyl acetate] to achieve extraction of the remaining soluble lipid fraction from said marine and aquatic animal material;
- (r) separating the liquid and solid contents;

- (s) recovering a second lipid-rich fraction by evaporation of the solvent from the liquid contents of step (e);
- (t) recovering the solid contents.

4. (Amended) A method as in [any of] claim[s] 1 [to 3], wherein steps (b) and (d) are conducted under inert gas atmosphere.

5. (Amended) A method as in [any of] claim[s] 1 [to 4], wherein steps (b) and (e) are effected by techniques selected from filtration, centrifugation and sedimentation.

6. (Amended) A method as in [any of] claim[s] 1 [to 5] , wherein steps (c) and (f) are effected by techniques selected from vacuum evaporation, flash evaporation and spray drying.

7. (Amended) A method as in [any of] claim[s] 1 [to 6], wherein after step (b) and before step (c), the method additionally comprises the intervening step of washing the solid contents with the solvent and adding the resulting washing solution to the liquid contents of step (b).

8. (Amended) A method as in [any of] claim[s] 1 [to 7], wherein after step (e) and before step (f), the method additionally comprises the intervening step of washing the solid contents with the organic solvent selected in step (d).

9. (Amended) A method as in [any of] claim[s] 1 [to 8], wherein prior to step (a) the marine and aquatic animal material is finely divided[, preferably to an average particle size of 5mm or less].

10. (Amended) A method as in claim[s] 1 [to 9], wherein steps (a) and (b) are conducted at solvent temperatures of not more than about 5°C [or less].

11. (Amended) A method as in claim[s] 1 [to 10], wherein said marine and aquatic animal is zooplankton.

12. (Amended) A method as in claim 11, wherein said zooplankton is selected from krill and Calanus.

14. (Amended) A method as in claim[s] 1 [to 10], wherein said marine and aquatic animal is fish filleting by-products.

15. (Amended) A method for extracting an astaxanthin-and-canthalxantin-containing lipid fraction from a marine and aquatic animal material selected from zooplankton and fish filleting by-products, [preferably viscera,] said method comprising the steps of:

- (a) placing said animal material in a ketone solvent[, preferably acetone] to achieve an extraction of the soluble lipid fraction from said marine and aquatic animal material;
- (b) separating the liquid and solid contents;
- (c) recovering a lipid-rich fraction from the liquid contents by evaporation of the solvent present in the liquid contents;

whereby an astaxanthin-and-canthalxantin-containing lipid fraction is obtained.

16.(Amended) A method for extracting a lipid fraction from a marine and aquatic animal material selected from zooplankton and fish filleting by-products, [preferably viscera,] said method comprising the steps of:

- (a) placing said animal material in a solvent mixture comprising acetone and ethanol to achieve an extraction of the soluble lipid fraction from said marine and aquatic animal material;
 - (b) separating the liquid and solid contents;
 - (c) recovering a lipid-rich fraction from the liquid contents by evaporation of the solvents present in the liquid contents;
whereby a lipid fraction is obtained.

17. (Amended) A method as in claim 15 [or 16], wherein the animal material is selected from krill and *Calanus*.

19. (Amended) A method as in [any one of] claim[s] 15 [to18], wherein during step (a), the animal material is homogenized.

20. (Amended) A method as in [any one of] claim[s] 15 [to 19], wherein steps (b) and (d) are conducted under inert gas atmosphere.

21. (Amended) A method as in [any one of] claim[s] 15 [to 20], wherein step (b) is effected by a technique selected from filtration, centrifugation and sedimentation.

22. (Amended) A method as in [any one of] claim[s] 15 [to21], wherein step (c) is effected by a technique selected from vacuum evaporation, flash evaporation and spray drying.

23. (Amended) A method as in [any one of] claim[s] 15 [to 22], wherein after step (b) and before step (c), the method additionally comprises a step of washing said solid contents with solvent and adding the resulting washing solution to the liquid contents of step (b).

24. (Amended) A method as in [any one of] claim[s] 15 [to 23], wherein prior to step (a) the marine and aquatic animal material is finely divided[, preferably to an average particle size of 5mm or less].

25. (Amended) A method as in [any one of] claim[s] 15 [to 23], wherein steps (a) and (b) are conducted at solvent temperatures of not more than about 5°C [or less].

26. (Amended) A krill lipid extract characterized in that the carotenoid content in astaxanthin is at least about 75 [and preferably at least about 90] mg/g of krill extract, and the carotenoid content in canthaxanthin is at least about 250 mg/g [and preferably at least about 270 mg/g] of krill extract.

27. (Amended) A method of lipid extraction as in [any one of] claim[s] 1 [to 14], wherein the solid contents of step (b) [and/or e)] is recovered and consists of a dehydrated residue containing active enzymes.

30. (Amended) A method of lipid extraction as in [any one of] claim[s] 15 [to 25], wherein the solid contents of step (b) is recovered and consists of a dehydrated residue containing active enzymes.

31. (Amended) A method for extracting lipid fractions from marine and aquatic animal material, said method comprising the steps of:

- (a) placing marine and aquatic animal material in a ketone solvent[, preferably acetone] to achieve extraction of the soluble lipid fraction from said marine and aquatic animal material;
- (b) separating the liquid and solid contents;
- (c) recovering a first lipid-rich fraction from the liquid contents of step (b) by evaporation of the solvent present in the liquid contents;

- (d) placing said solid contents in an organic solvent selected from the group of solvents consisting of alcohol[, preferably ethanol, isopropanol or *t*-butanol] and esters of acetic acid[, preferably ethyl acetate] to achieve extraction of the remaining soluble lipid fraction from said marine and aquatic animal material;
- (e) separating the liquid and solid contents;
- (f) recovering a second lipid-rich fraction by evaporation of the solvent from the liquid contents of step (e);
- whereby lipid fractions are obtained.

32. (Amended) A method of lipid extraction as in claim 31, wherein the solid contents of step (b) [and/or e)] is recovered and consists of a dehydrated residue containing active enzymes.

33. (Amended) [The] A lipid fraction [obtained by the method of any one of claims 1 to 25, 27, and 30 to 32] extracted from marine and aquatic animal material, by a method comprising the steps of:

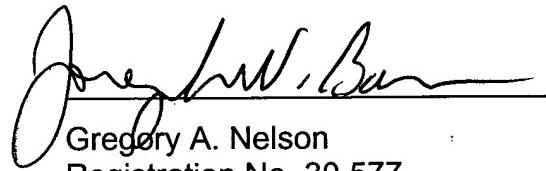
- (g) placing marine and aquatic animal material in a ketone solvent to achieve extraction of the soluble lipid fraction from said marine and aquatic animal material;
- (h) separating the liquid and solid contents;
- (i) recovering a first lipid-rich fraction from the liquid contents of step (b) by evaporation of the solvent present in the liquid contents;
- (j) placing said solid contents in an organic solvent selected from the group of solvents consisting of alcohol and esters of acetic acid to achieve extraction of the remaining soluble lipid fraction from said marine and aquatic animal material;
- (k) separating the liquid and solid contents;

- (l) recovering a second lipid-rich fraction by evaporation of the solvent
from the liquid contents of step (e);
(m) recovering the solid contents.

Respectfully submitted

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